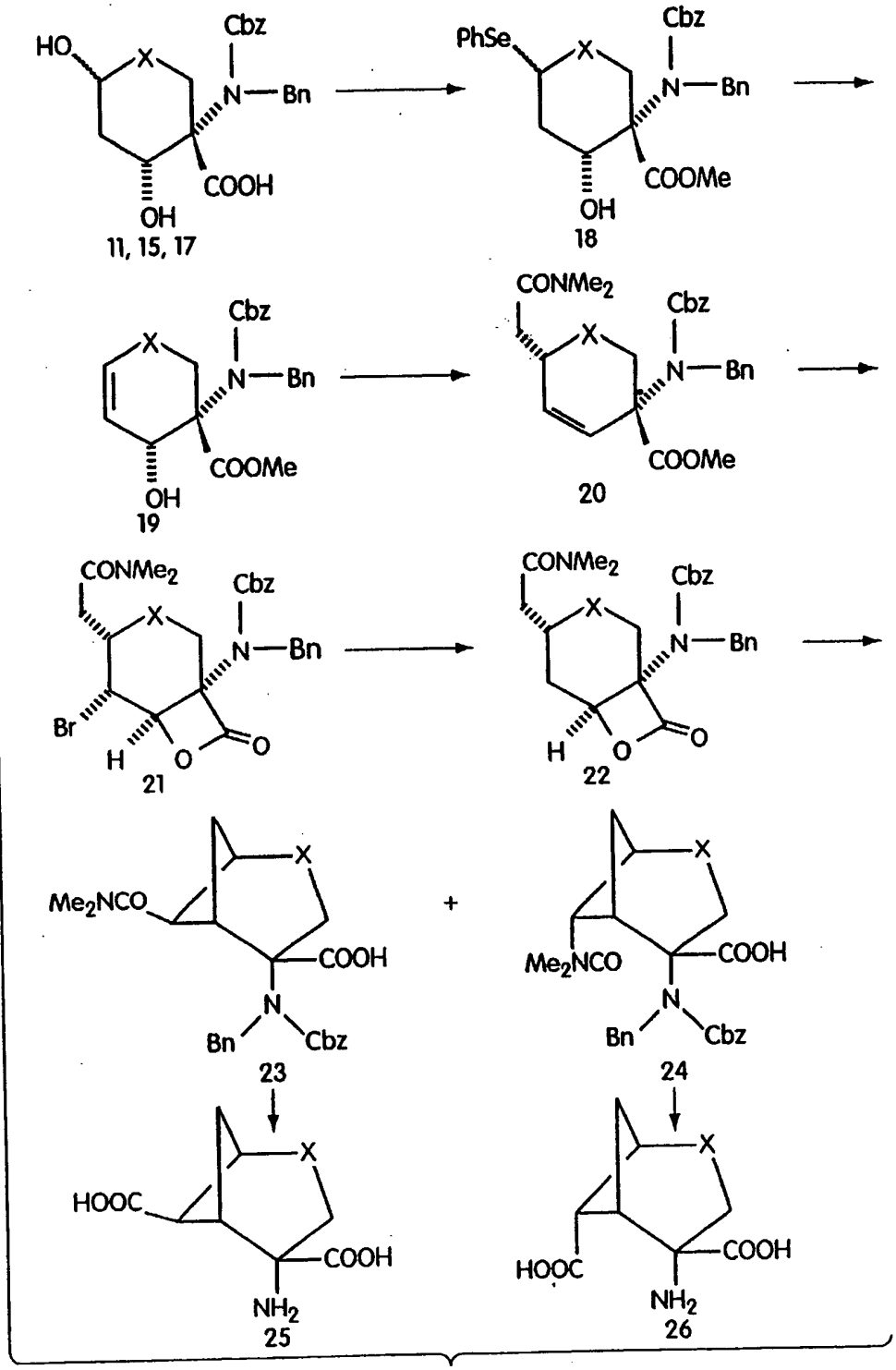

HO
X
Cbz
N
Bn
COOH
OH
11, 15, 17
PhSe
COOMe
18
19
CONMe2
20
Br
H
O
21
22
Me2NCO
23
24
HOOC
NH2
25
26

Fig. 1

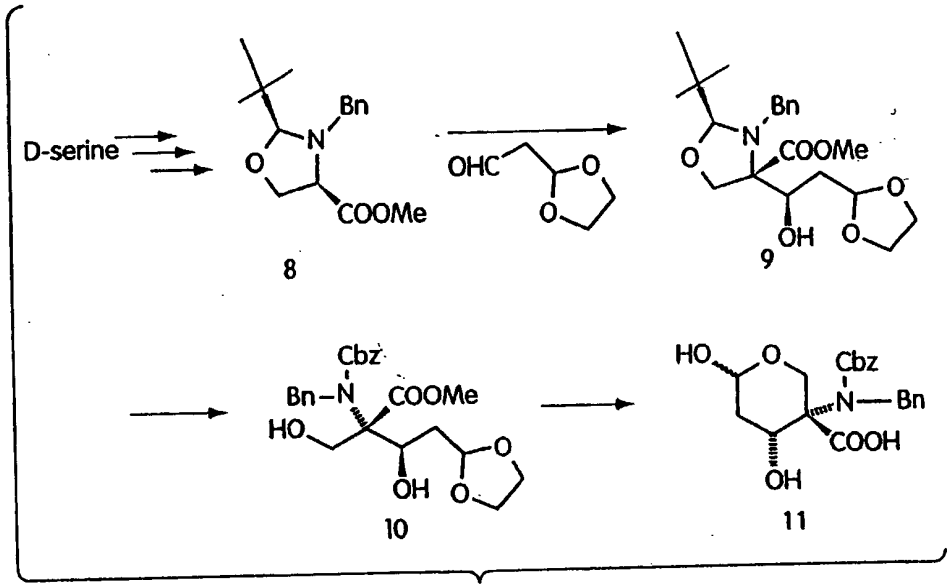

D-serine
Bn
N
O
COOMe
8
OHC
O
O
Bn
N
O
COOMe
OH
O
O
9
Cbz
Bn–N
COOMe
HO
OH
O
O
10
HO
O
Cbz
N—Bn
COOH
OH
11

Fig. 2

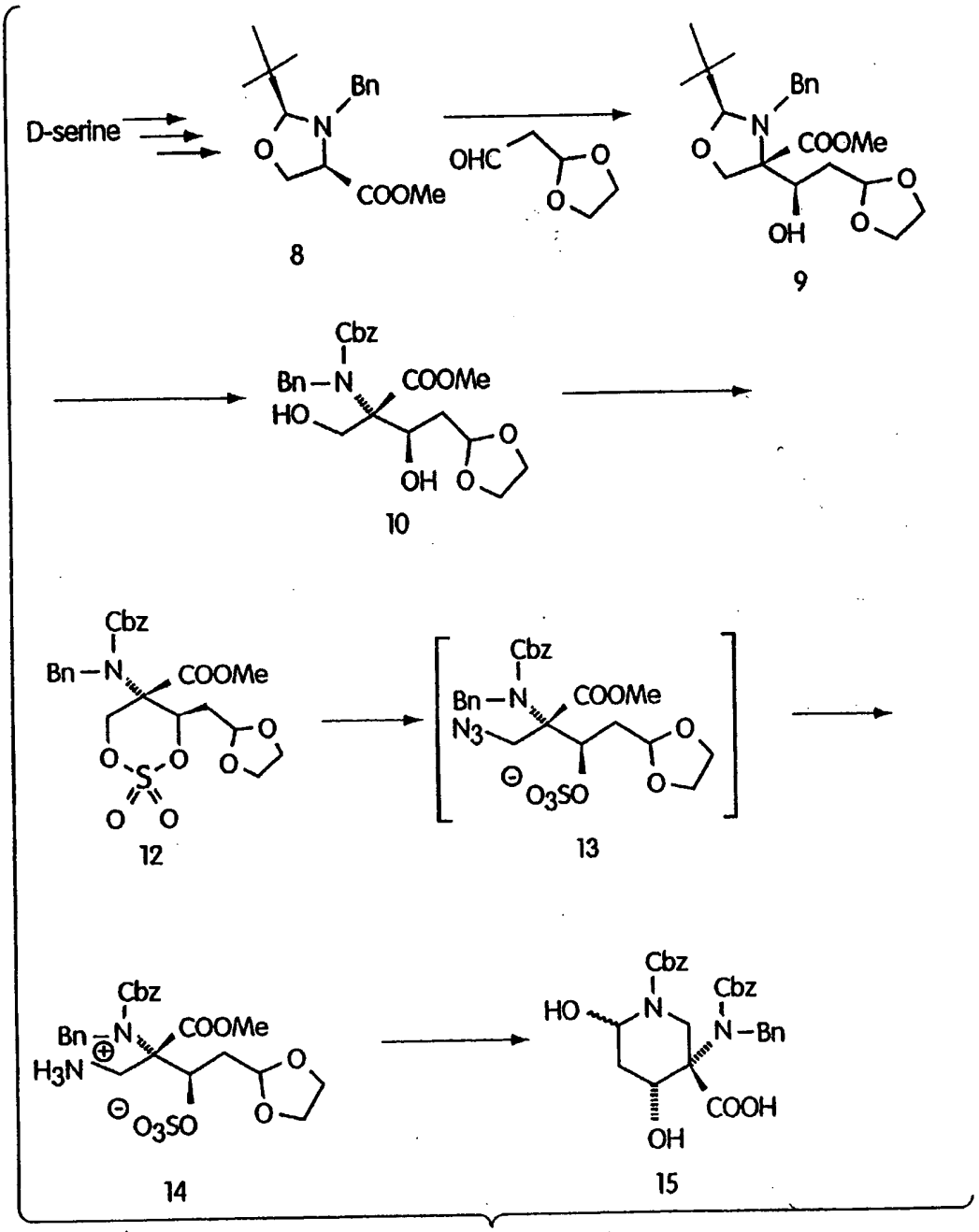

D-serine
Bn
N
O
COOMe
8
OHC
O
O
Bn
N
O
COOMe
OH
O
O
9
Cbz
Bn–N
COOMe
HO
OH
O
O
10
Cbz
Bn–N
COOMe
O
O
S
O
O
O
O
12
Cbz
Bn–N
COOMe
N3
O3SO
O
O
13
Cbz
Bn
N
COOMe
H3N
O3SO
O
O
14
Cbz
HO
N
Cbz
N–Bn
COOH
OH
15

Fig. 3

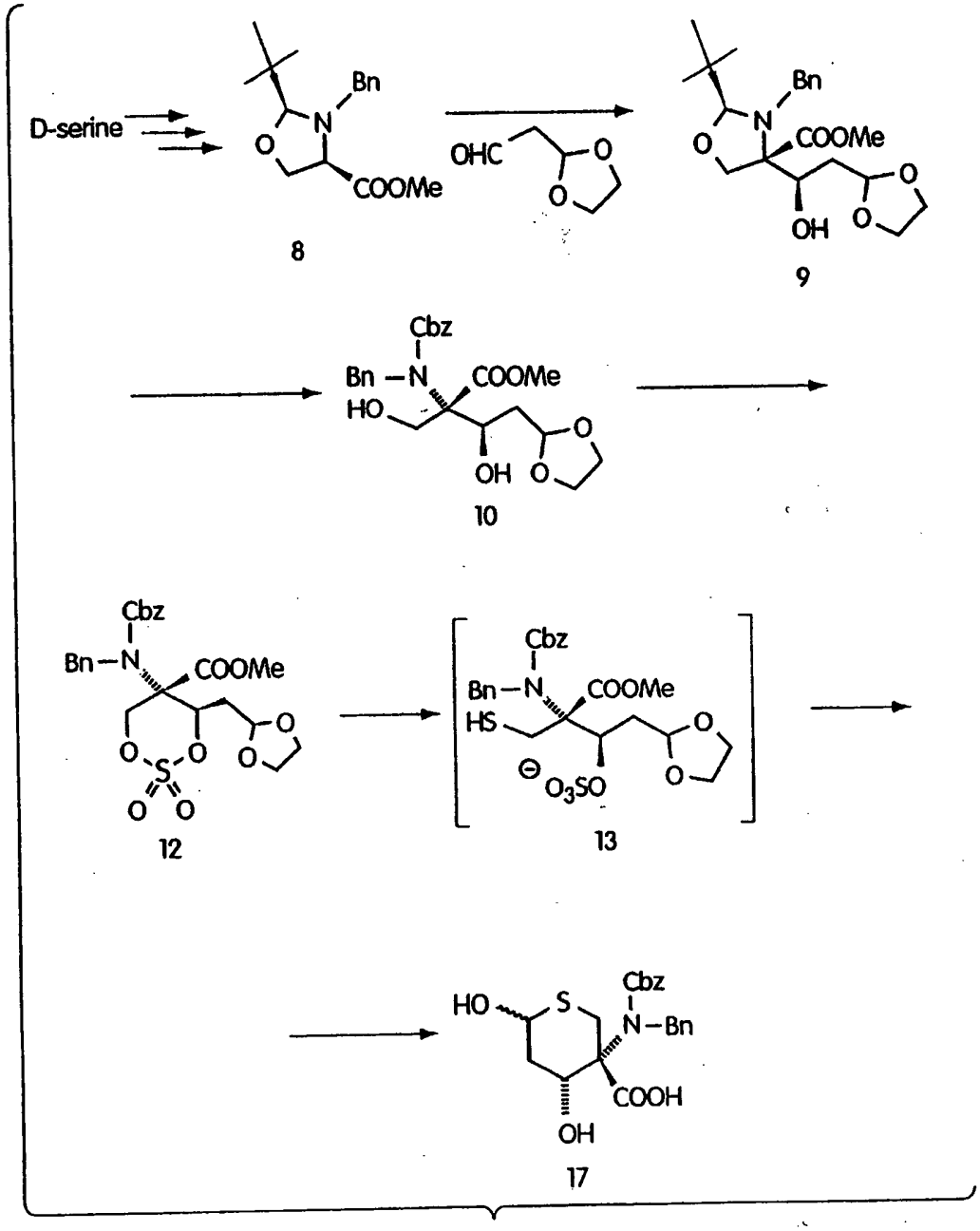

D-serine
Bn
N
O
COOMe
8
OHC
O
O
Bn
N
O
COOMe
O
O
OH
9
Cbz
Bn – N
COOMe
HO
OH
O
O
10
Cbz
Bn – N
COOMe
O
O
O
S
O
O
O
12
Cbz
Bn – N
COOMe
HS
⊖ O3SO
O
O
13
HO
S
Cbz
N – Bn
COOH
OH
17

Fig. 4

EC_{50} values (μm)

		Group I mGluRs	
		mGluR1a	mGluR5a
	Glu	4.9 ± 0.21	3.1 ± 0.23
	ACPD	15 ± 2.2	23 ± 2.6
	AP4	NE	NE
BcACPD	DHS-4-79	8.4 ± 0.88	5.5 ± 0.73
	6c	121 ± 10	57 ± 6
	6d	>1000	>1000
	6a	232 ± 23	91 ± 11
	6b	1.6 ± 0.14	0.72 ± 0.11

		Group II mGluRs	
		mGluR2	mGluR3/1a
	Glu	0.29 ± 0.07	1.9 ± 0.31
	ACPD	2.0 ± 0.3	40 ± 5.8
	AP4	NE	NE
BcACPD	DHS-4-79	1.2 ± 0.14	13 ± 1.8
	6c	54 ± 9	185 ± 87
	6d	>1000	>1000
	6a	38 ± 10	255 ± 84
	6b	0.33 ± 0.06	2.2 ± 1.5

		Group III mGluRs	
		mGluR4a	mGluR6
	Glu	9.8 ± 0.81	4.9 ± 0.37
	ACPD	~ 800	82 ± 6.2
	AP4	0.33 ± 0.087	0.28 ± 0.025
BcACPD	DHS-4-79	82 ± 8.6	29 ± 16
	6c	~1000	~ 800
	6d	>1000	>1000
	6a	>1000	>1000
	6b	23 ± 7.1	5.3 ± 0.93

Fig. 5

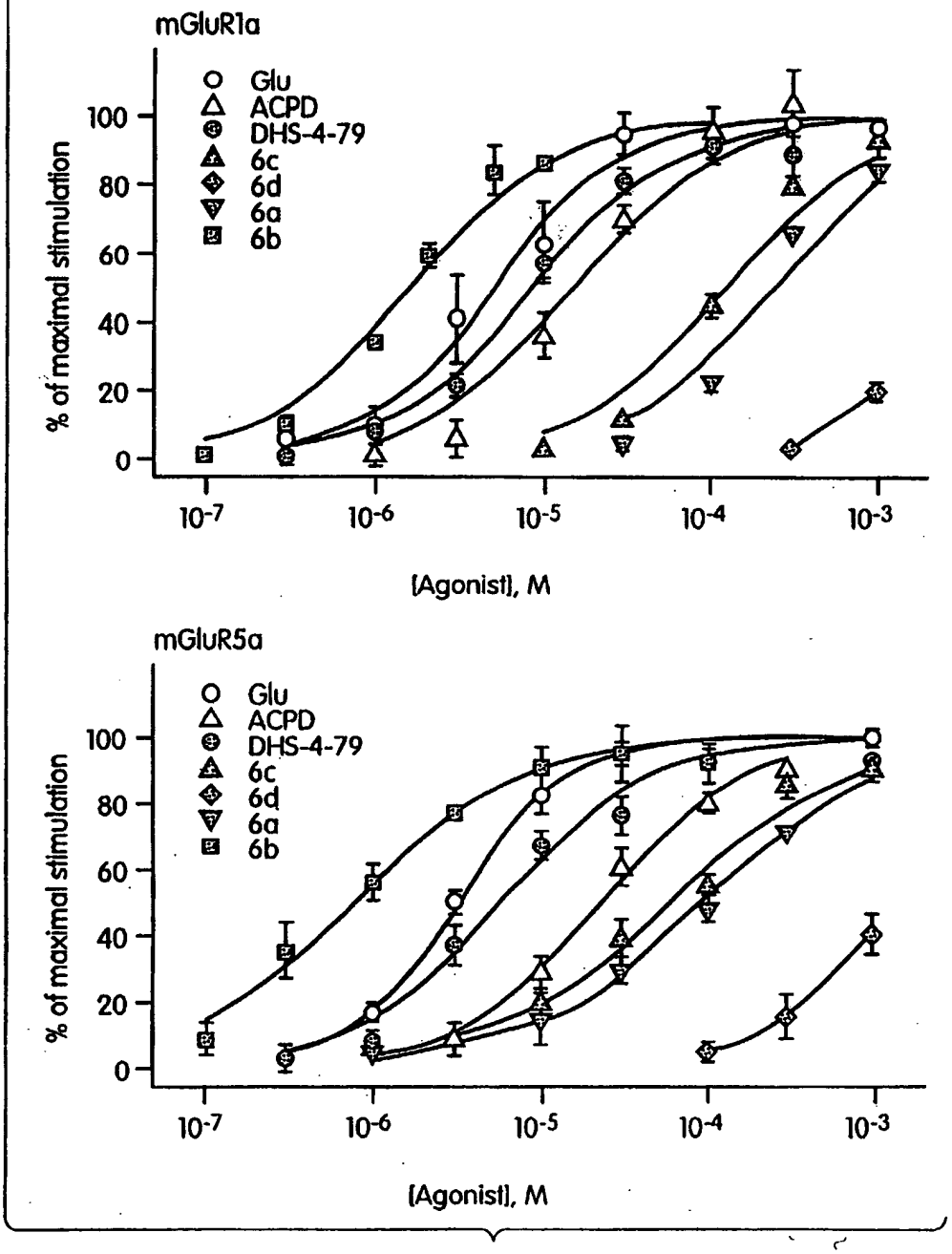

mGluR1a
Glu
ACPD
DHS-4-79
6c
6d
6a
6b
% of maximal stimulation
100
80
60
40
20
0
10-7
10-6
10-5
10-4
10-3
[Agonist], M
mGluR5a
Glu
ACPD
DHS-4-79
6c
6d
6a
6b
% of maximal stimulation
100
80
60
40
20
0
10-7
10-6
10-5
10-4
10-3
[Agonist], M

Fig. 6

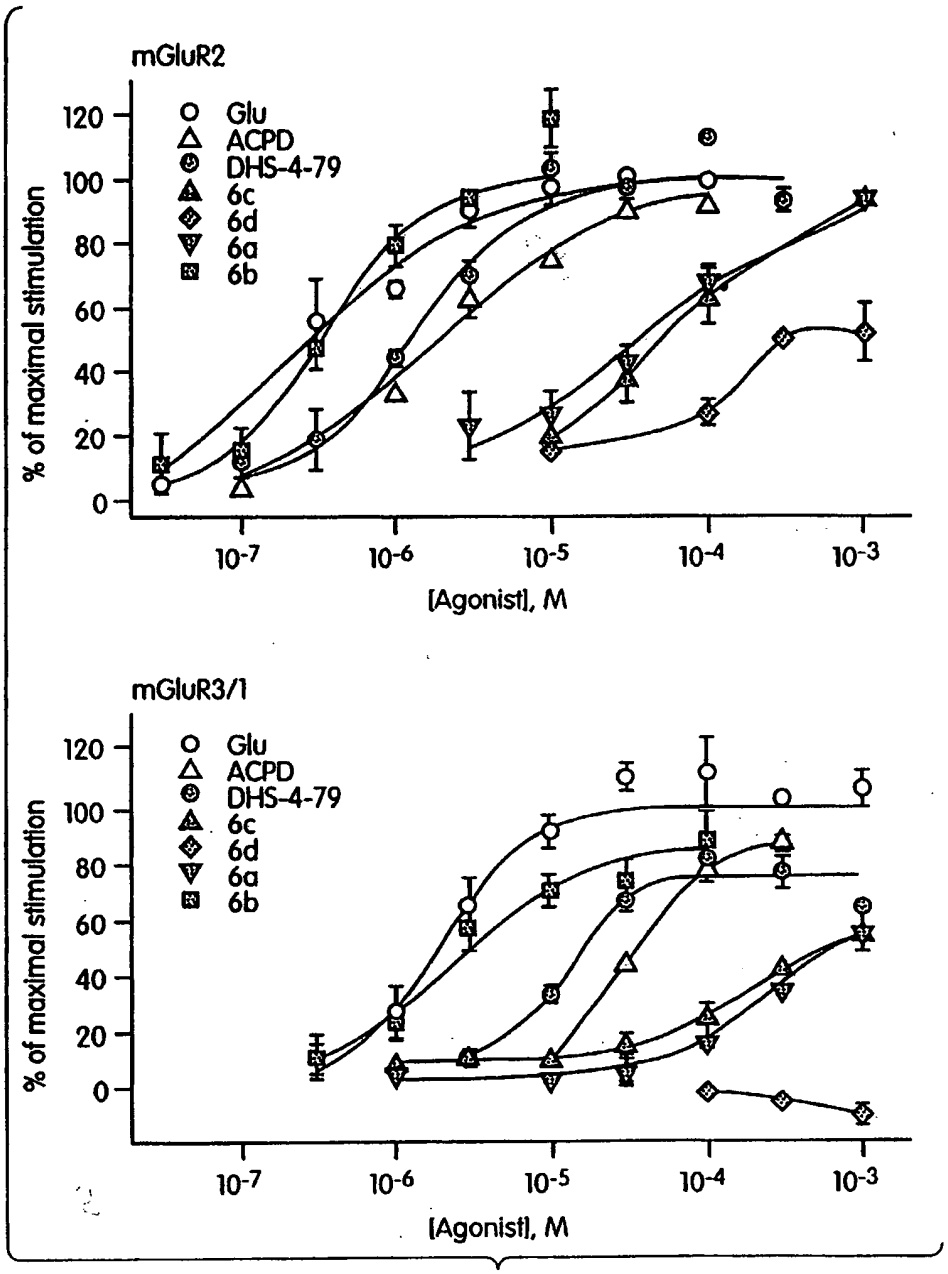

mGluR2
Glu
ACPD
DHS-4-79
6c
6d
6a
6b
% of maximal stimulation
120
100
80
60
40
20
0
10-7
10-6
10-5
10-4
10-3
[Agonist], M
mGluR3/1
Glu
ACPD
DHS-4-79
6c
6d
6a
6b
% of maximal stimulation
120
100
80
60
40
20
0
10-7
10-6
10-5
10-4
10-3
[Agonist], M

Fig. 7

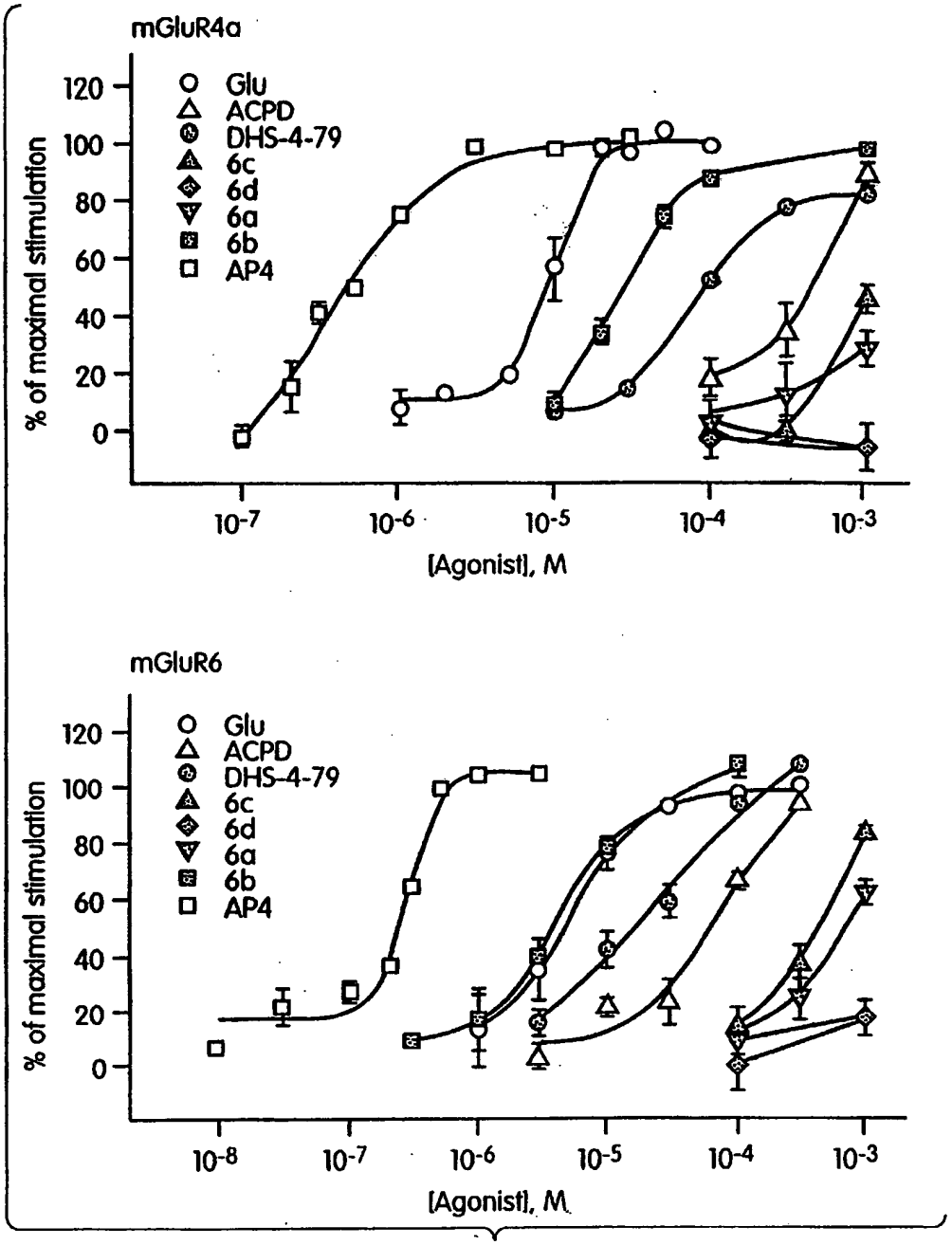

mGluR4a
% of maximal stimulation
120
100
80
60
40
20
0
Glu
ACPD
DHS-4-79
6c
6d
6a
6b
AP4
10-7
10-6
10-5
10-4
10-3
[Agonist], M
mGluR6
% of maximal stimulation
120
100
80
60
40
20
0
Glu
ACPD
DHS-4-79
6c
6d
6a
6b
AP4
10-8
10-7
10-6
10-5
10-4
10-3
[Agonist], M

Fig. 8

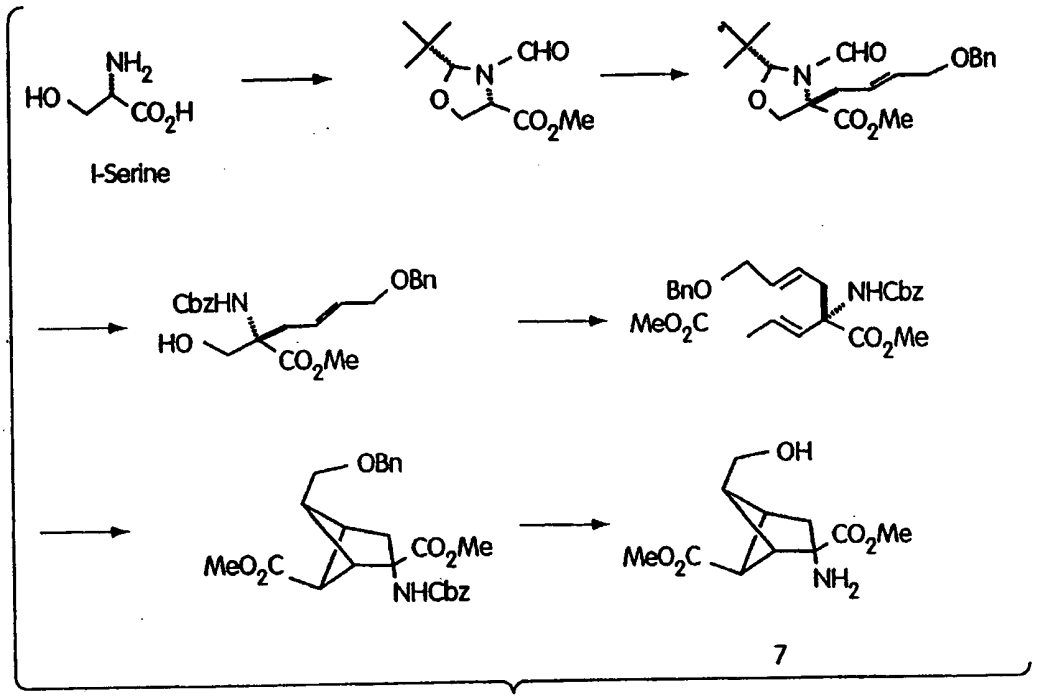

NH2
HO
CO2H
l-Serine
CHO
N
O
CO2Me
OBn
CbzHN
HO
BnO
MeO2C
NHCbz
MeO2C
CO2Me
NHCbz
OH
NH2
7

Fig. 9

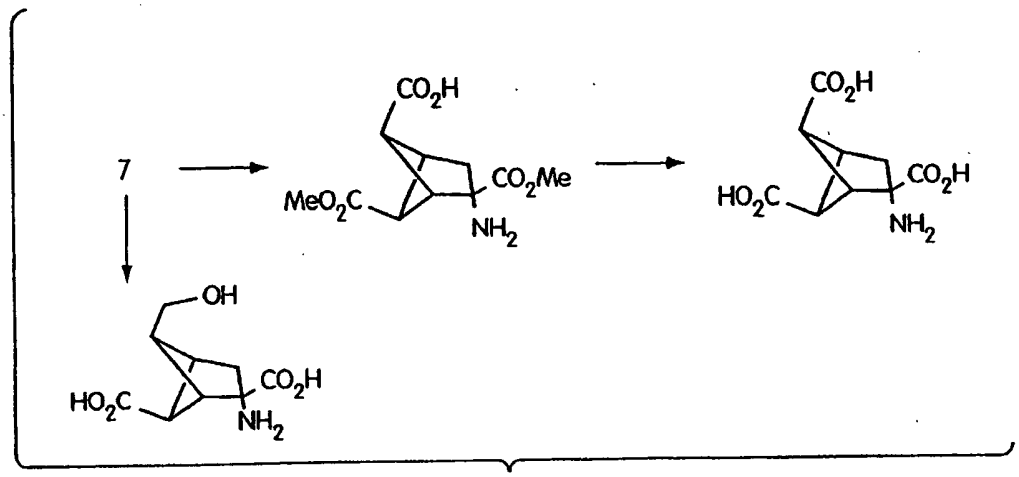
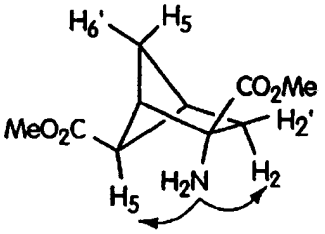
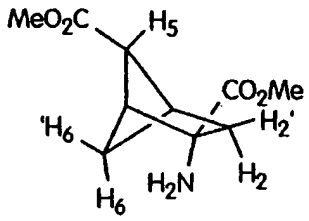


Fig. 10



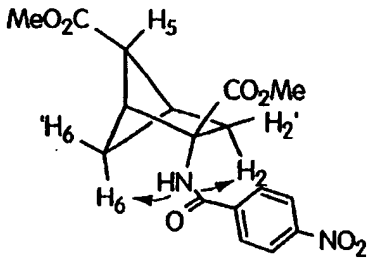
5b

feature
J_{5-6} =7.8 Hz (w-coupling)
nOe between H_5 and amino group; H_2 and amino group



5c

feature
J_{5-6} =8.1 Hz (w-coupling)



from 5c

feature
nOe between H_6 and amide-H; H_2 and amide-H

Fig. 11

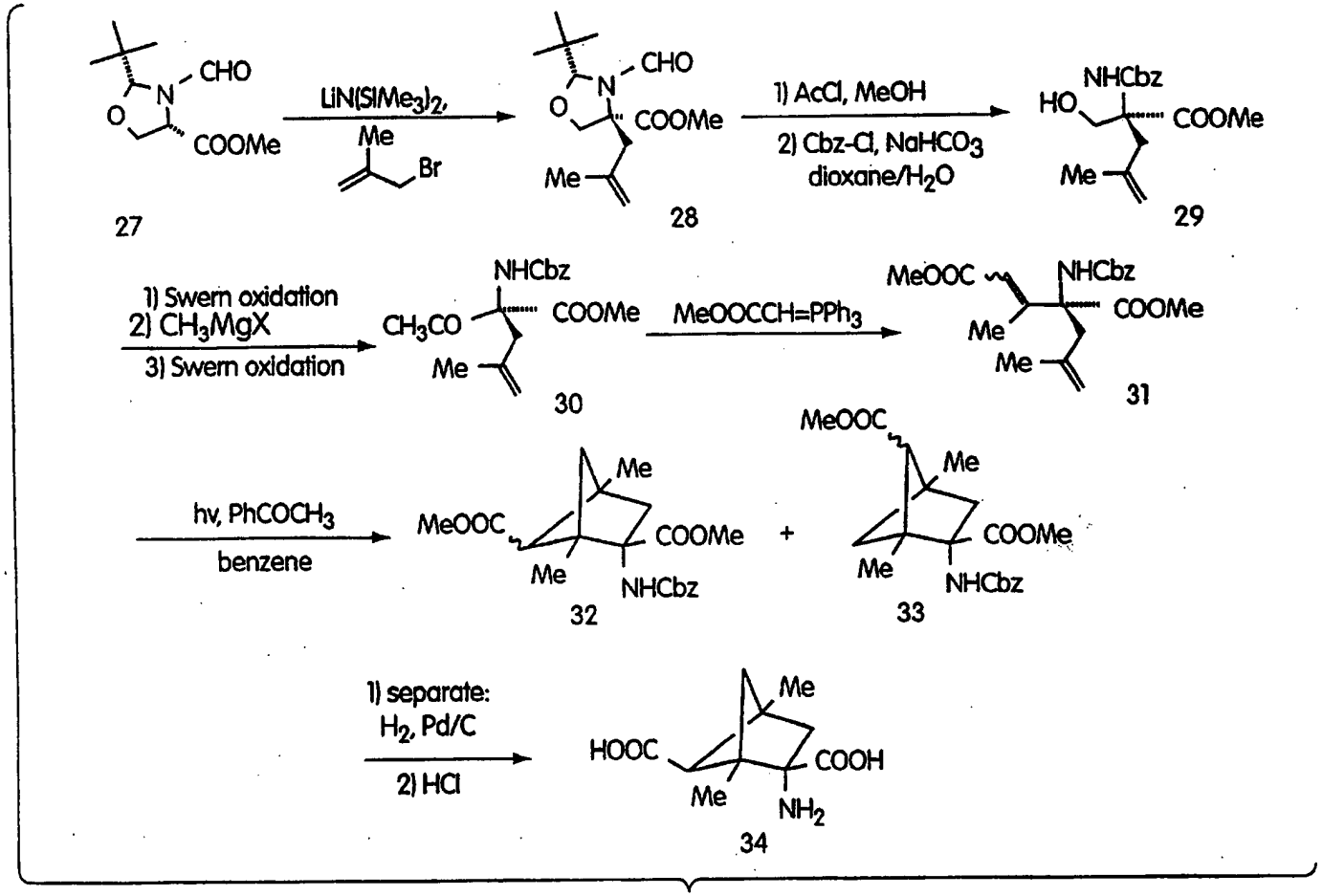

CHO
N
O
COOMe
LiN(SiMe3)2,
Me
Br
COOMe
Me
1) AcCl, MeOH
2) Cbz-Cl, NaHCO3
dioxane/H2O
NHCbz
HO
COOMe
Me
27
28
29
1) Swern oxidation
2) CH3MgX
3) Swern oxidation
NHCbz
CH3CO
COOMe
Me
MeOOCCH=PPh3
MeOOC
NHCbz
COOMe
Me
Me
30
31
hv, PhCOCH3
benzene
MeOOC
Me
COOMe
Me
NHCbz
+
MeOOC
Me
COOMe
Me
NHCbz
32
33
1) separate:
H2, Pd/C
2) HCl
Me
HOOC
COOH
Me
NH2
34

Fig. 12

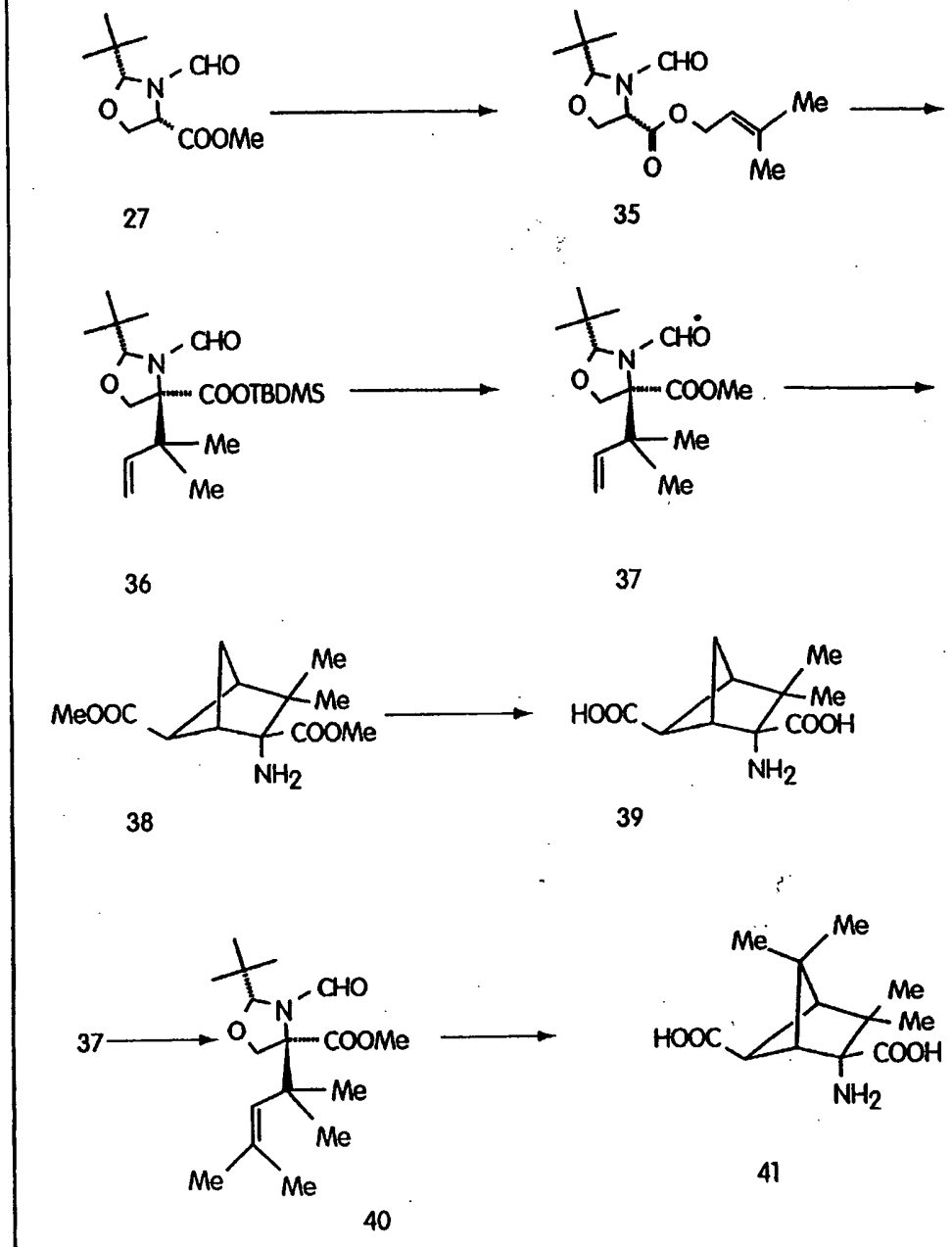

CHO
N
O
COOMe
27
Me
Me
35
COOTBDMS
36
COOMe
37
MeOOC
38
HOOC
COOH
NH2
39
40
41

Fig. 13

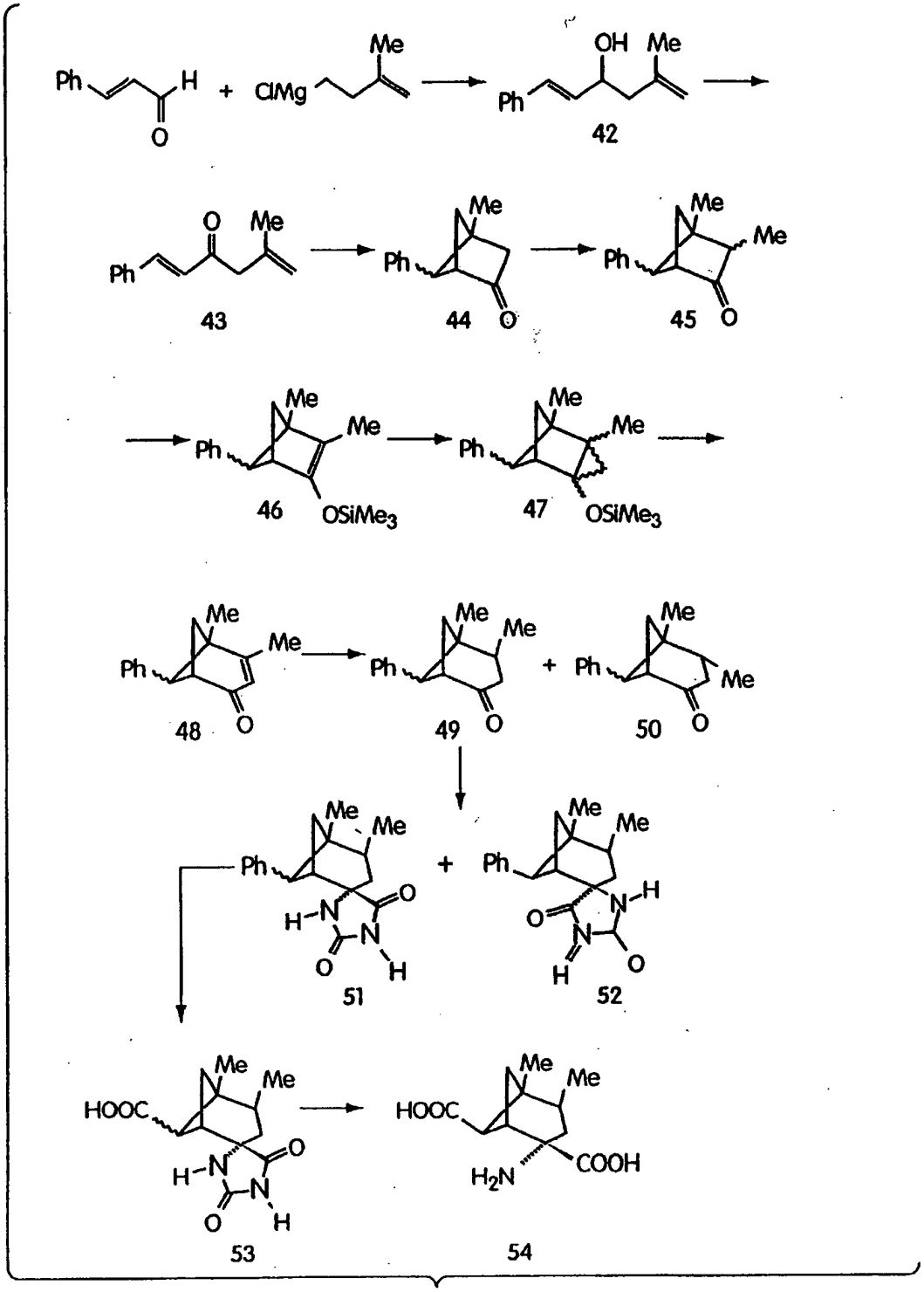

Ph
H
O
+
ClMg
Me
OH
Me
Ph
42
O
Me
Ph
43
Me
Ph
44
O
Me
Me
Ph
45
O
Me
Me
Ph
46
OSiMe3
Me
Me
Ph
47
OSiMe3
Me
Me
Ph
48
O
Me
Me
Ph
49
O
+
Me
Ph
Me
50
O
Me
Me
Ph
51
O
H
N
N
O
H
+
Me
Me
Ph
52
O
N
H
N
H
O
HOOC
Me
Me
H
N
N
O
O
H
53
HOOC
Me
Me
H2N
COOH
54

Fig. 14

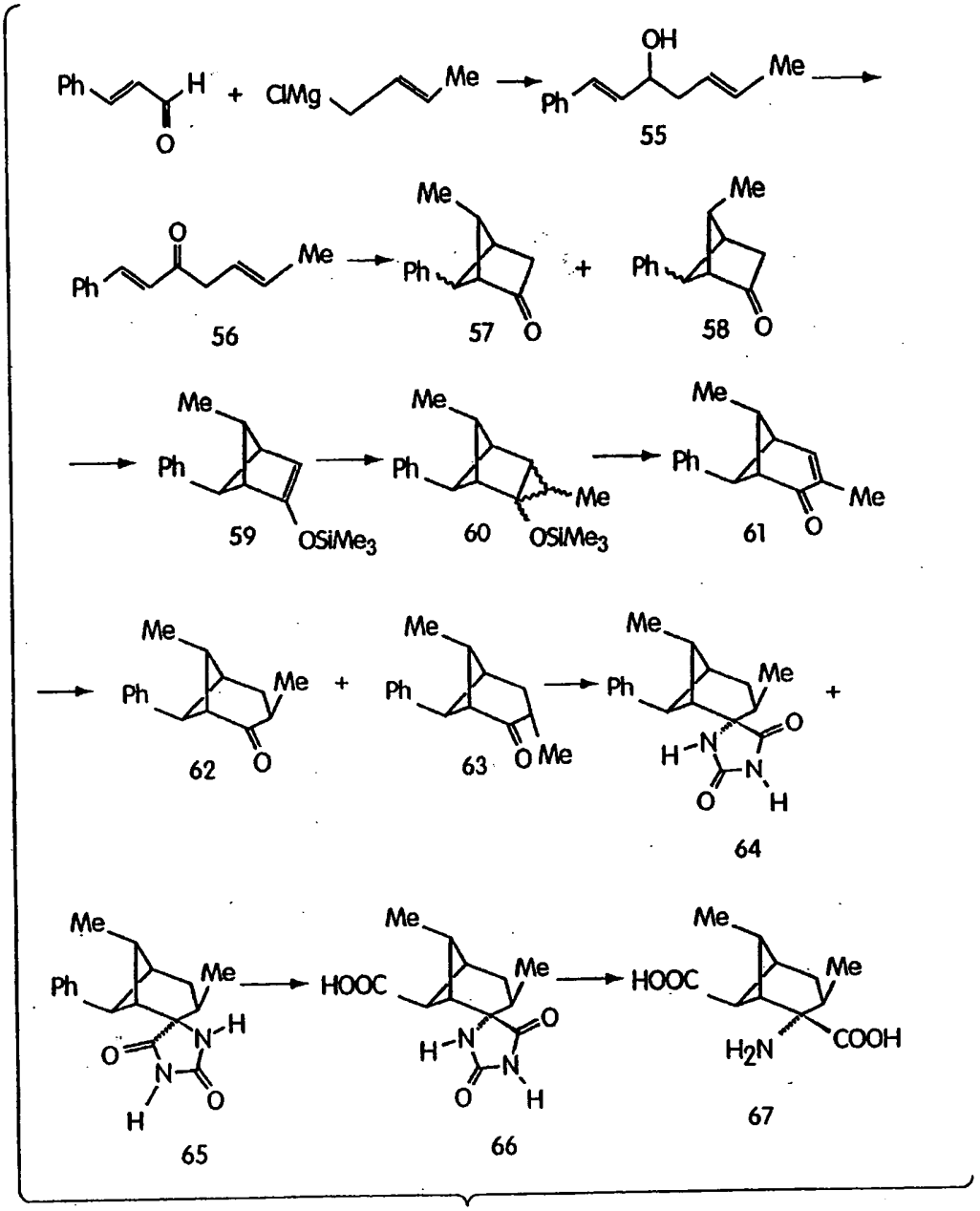

Ph
H
O
+
ClMg
Me
OH
55
56
57
58
59
OSiMe3
60
61
62
63
64
65
66
67
HOOC
H2N
COOH

Fig. 15

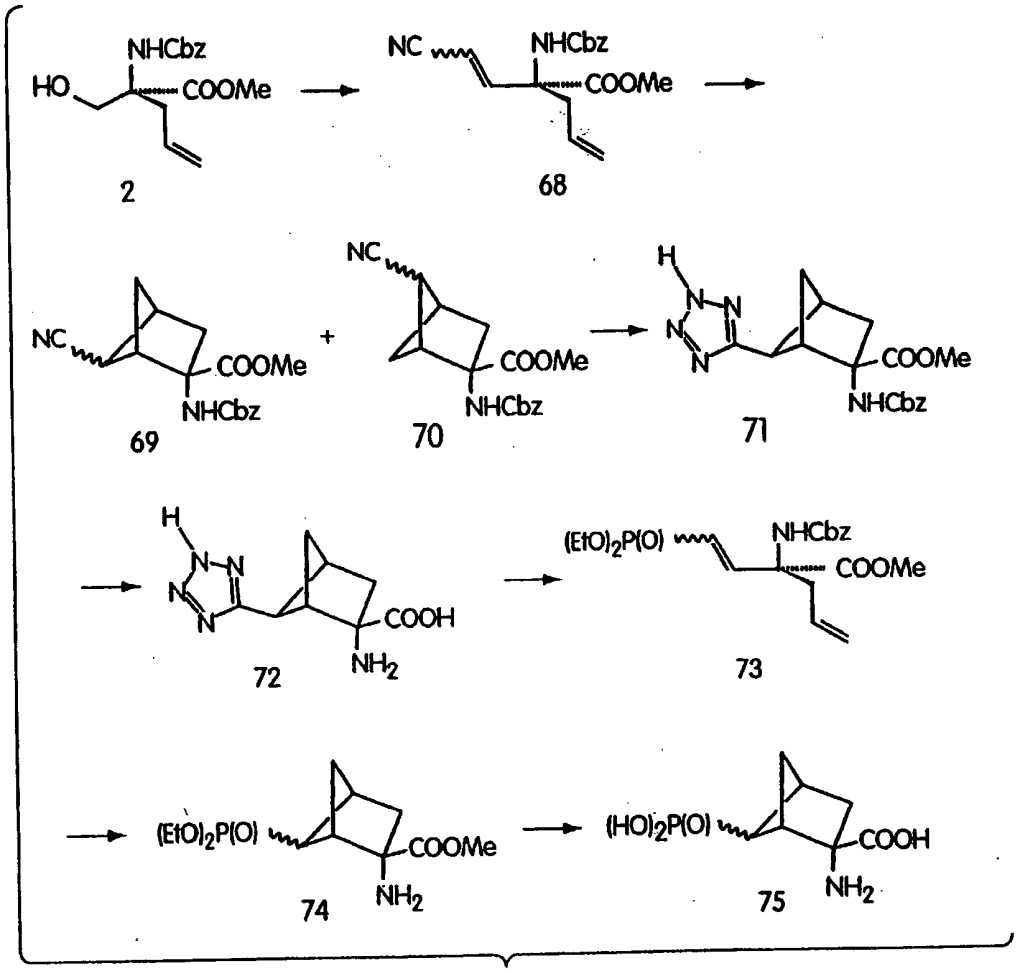

NHCbz
HO
COOMe
2
NC
NHCbz
COOMe
68
NC
COOMe
NHCbz
69
+
NC
COOMe
NHCbz
70
H
N
N
N
COOMe
NHCbz
71
H
N
N
N
COOH
NH2
72
(EtO)2P(O)
NHCbz
COOMe
73
(EtO)2P(O)
COOMe
NH2
74
(HO)2P(O)
COOH
NH2
75

Fig. 16